

WESTBAY® RETROFIT WELL SUMMARY

Location ID: BLM-39

Field Representatives: Canavan, Giles, Hunnicutt-Mack, McClure, Pearson, Rivera

Purpose of Well: To locate a high flow conduit through which contaminated ground water is flowing through the Mid-Plume Constriction Area (MPCA) and to monitor groundwater contaminant transport within the MPCA.

Date Started: 3/6/99

Date Completed: 6/18/99

Northing: 229370.25

Easting: 407598.37

Brass Cap: 4634.85' **Outer Casing:** 4636.16' **Inner Casing:** 4636.12' (GPS)

Drilling Method: Mud Rotary

Drilling Contractor: Stewart Brothers

Driller: Randy Stewart

Total Depth Borehole: 620'
(Sloughed to 617')

Diameter Borehole: 12.25" to 118'; 17.5" to 118'; set 14" OD surface casing; 12.25" to 620' (TD).

Total Depth Surface Casing: 118'

Diameter Surface Casing: 14" OD

Total Depth Conv. Well Casing: 595.12' **Diameter Conv. Well Casing:** 4.5" OD

Total Depth 1.5" OD Westbay® Casing: 585.42'

Water First Detected: Not detected while drilling.

Water Level Open Borehole: 390'
(from Geophysical Log)

Water Level Conventional Cased Borehole (post-Development SS): 356.6'

Estimated Water Use (all water pre- Development): 54,400 gallons

Sampling Zones

Screened Zone	Sand Pack	Westbay® Zone (packer to packer)	Meas. Port Depth
<u>340.53' to 350.56'</u>	<u>331' to 354'</u>	<u>335' to 355'</u>	<u>345'</u>
<u>380.64' to 390.66'</u>	<u>374' to 399'</u>	<u>375' to 395'</u>	<u>385'</u>
<u>556.02' to 566.05'</u>	<u>548' to 572'</u>	<u>550' to 570'</u>	<u>560'</u>

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Conventional Well Casing UsedDiameter: 4"Stainless Steel Type: 304Schedule 5Schedule 105-foot: 0 = 0 ft5-foot: 1 = 5 ft10-foot: 0 = 0 ft10-foot: 2 = 20 ft20-foot: 0 = 0 ft20-foot: 27 = 540 ftTotal Sch 5 Footage = 0 ftTotal Sch 10 Footage = 565 ftTotal Footage of Blank Risers: 565 ftStick-Up: 1.33. Final stick-up (from
brass cap) = 1.31 ft.**Screen Used**Diameter: 4"Slot Size: 0.020"Stainless Steel Type: 304400-600-ft Depth Rating600-1000-ft Depth Rating5-foot: 0 = 0 ft5-foot: 0 = 0 ft10-foot: 3 = 30 ft10-foot: 0 = 0 ft20-foot: 0 = 0 ft20-foot: 0 = 0 ftTotal Footage of Screen: 30 ft**Annular Materials**

Based on field notes and drill reports.

Sand, grade 10/2050-lb. Bags Bentonite Pellets: 6150-lb. Bags: 48094-lb. Bags Cement: 55Sand, grade 30/7050-lb. Bags: 21

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Westbay® Casing Used:10-foot: 50 = 500 ft5-foot: 9 = 45 ft2-foot: 1 = 2 ftPacker: 8 = 40 ft Total Footage: 587 ftRegular Couplings: 56 Well Depth: 585.42 ftPumping Ports: 3 Stick-Up: 1.58 ft. Final stick-up (from brass cap) = 1.27 ft.Measurement Ports: 8End Caps: 1Magnetic Collars: 3**Pertinent Field Notes**

For more detail, refer to Field Notebooks: MPCA Book II, pages 23-36; Development Book #1, pages 1-4; Westbay Book #1, pages 23-25

- 3/6/99 Mobilized, mixed mud, spudded hole, and drilled 12.25" hole to 20' in Santa Fe Group Alluvium – M. Rivera.
- 3/7/99 Drilled 20'-123' in Santa Fe Group Alluvium. First drift survey at 40' is 0.2 degrees from vertical – M. Rivera.
- 3/8/99 Reamed to 17.5" to 120'. Installed 14" outside diameter (OD) surface casing – M. Rivera.
- 3/9/99 Drilled 120'-250' in Santa Fe Group Alluvium. Drift survey at 120' was vertical, at 180' was 0.5 degrees from vertical, and at 230' was 0.6 degrees from vertical. Will trip out and reconfigure to minimize drift – J. Pearson.
- 3/10/99 Drilled 250'-329' in Santa Fe Group Alluvium. Drift survey at 288': 0.75 degrees from vertical, and at 329': 0.6 degrees – J. Pearson.

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- 3/11/99 Drilled 329'-445'. Encountered bedrock at 370'. Drift survey at 420' off 0.25 degrees – J. Pearson.
- 3/16/99 Drilled 445' to total depth (TD) at 620'. Drift survey at 620' at 0.25 degrees from vertical – M. Rivera.
- 3/17/99 Drillers cleaned hole out. Geophysical logs made by Southwest Geophysical Services, Inc. Installed tremie pipe – M. Rivera.
- 3/18/99 Installed conventional 4.5" OD stainless steel well – M. Rivera.
- 3/19/99 Installed annular materials to 374' (5' above second screen) – M. Rivera.
- 3/20/99 Installed annular materials to 200', began grout – M. Rivera.
- 3/21/99 Grouted annulus to surface, deconned equipment – G. Giles.
- 4/25/99 Bailed 108 gallons, water light brown and soapy – M. Rivera.
- 4/26-4/29/99 Swabbed lower screen. Water light brown. Swabbing on upper two screens not possible due to low production – M. Rivera.
- 5/4/99 Pumped 858 gallons for development – G. Giles.
- 5/6-5/7/99 Pumped 564 gallons for development - M. Canavan.
- 5/11-5/14/99 Pumped 1,445 gallons for development - M. Canavan.
- 5/17-5/23/99 Pumped 2,777 gallons for development - M. Canavan, G. Giles, J.Pearson and L. Hunnicutt-Mack.
- 5/25/99 Jetted 4screens with 6,400 gallons each of well J water – M. Canavan.
- 5/26-5/28/99 Pumped 1,233 gallons from well. Final turbidity reading was 0.48 NTU's. Well is developed – M. Canavan and G. Giles.
- 6/16-6/18/99 Installed Westbay and inflated packers – M. McClure.